

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An improved optical configuration suited to the monitoring of a process flow through the wall of a containment vessel, comprising:

an optical path including a solid window transparent to wavelengths of interest, extending through and sealed to the wall of the containment vessel; and

~~an~~ a curved optical surface on the window for ~~disposed in the optical path associated with~~ minimizing aberration, increasing numerical aperture, or both.

2. (Currently Amended) The improved optical configuration of claim 1, wherein:

the window has a surface facing into the process flow and a surface facing away from the process flow; and

the surface facing away from the process flow is curved ~~associated with minimizing aberration or increasing numerical aperture.~~

3. (Currently Amended) The improved optical configuration of claim 1, further including:

a lens disposed ~~outside~~ between the window and the containment vessel and in the optical path; ~~and~~

~~wherein the window has a surface facing into the process flow and a surface facing the lens which is associated with minimizing aberration or increasing numerical aperture.~~

4. (Currently Amended) The improved optical configuration of claim ~~3~~ 1, wherein the optical surface of the window facing the lens is substantially spherical.

5. (Original) The improved optical configuration of claim 3, wherein the arrangement of the lens and window is such that light rays of the optical path are generally normal to the surface of the window facing the lens.

6. (Original) The improved optical configuration of claim 1, including a sapphire window.

7. (Currently Amended) An improved optical configuration suited to the monitoring of a process flow through the wall of a containment vessel, comprising:

an optical path including a solid window transparent to wavelengths of interest, extending through and sealed to the wall of the containment vessel, the window including a curved optical surface; and

a lens disposed in the optical path ~~outside~~ between the window and the vessel, the window and lens cooperatively minimizing aberration, increasing numerical aperture, or both.

8. (Currently Amended) The improved optical configuration of claim 7, wherein:
the window has a surface facing into the process flow and a surface facing the lens ~~which is associated with minimizing aberration or increasing numerical aperture; and~~
wherein the surface facing the lens is curved.

9. (Original) The improved optical configuration of claim 8, wherein the surface of the window facing the lens is substantially spherical.

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10. (Original) The improved optical configuration of claim 8, wherein the light rays of the optical path are generally normal to the surface of the window facing the lens.
11. (Original) The improved optical configuration of claim 7, including a sapphire window.
12. (New) The improved optical configuration of claim 1, wherein the curved surface is aspherical.
13. (New) The improved optical configuration of claim 7, wherein the curved surface is aspherical.
14. (New) The improved optical configuration of claim 3, wherein the lens includes multiple elements.
15. (New) The improved optical configuration of claim 14, wherein the lens is an arcomat.
16. (New) The improved optical configuration of claim 7, wherein the lens includes multiple elements.

Serial No. 10/734,058

- 5 -

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17. (New) The improved optical configuration of claim 16, wherein the lens is an arcomat.